



JAGIELLONIAN UNIVERSITY
IN KRAKOW

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PhD position openings

Position

- PhD student

Location

- Department of Photonics, Institute of Physics, Jagiellonian University, Kraków, Poland

Conditions

- Stipend (2000 PLN/month) in addition to the regular Faculty of Physics, Astronomy and Applied Computer Science stipend (if enrolled for the department PhD program)
- Funding until November 2019

Project brief description

The project concentrates on the development of novel schemes of detecting nuclear magnetic resonance (NMR) at ultra-low or truly zero magnetic fields. This goal will be achieved by combination of pre- and hyperpolarization techniques and optical detection of magnetic fields. The signals will be observed experimentally under weak field, where nuclear dynamics is governed by the intramolecular interactions (J coupling) and magnetic field (if present) is a small perturbation. The specific goals of the project are:

- construction and optimization of experimental setup for zero- and ultra-low field NMR
- systematic studies of zero-field NMR
- detection of chemical shift in ultra-low magnetic field
- development of experimental scheme for detection of long-range spin couplings

These tasks will be realized in a close collaboration with the PI and other PhD students in fully equipped physics laboratory.

Expectations

We seek an **enthusiastic, hard-working** and **highly motivated** PhD students with a **degree in Physics, Chemistry or related disciplines**. We expect **background in optics or nuclear magnetic resonance (including magnetic resonance imaging)** and **laboratory experience**. Experience in computer simulations, electronics or fundamental physics is welcome.



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Required documents

The candidates should supply the following documents:

- a complete CV
- names and contact information of two reference persons with knowledge about the applicant's previous experiences
- a brief (max 1 A4-page) account indicating previous trainings in projects area of interest.

Application deadline

- 28 September 2017

Form of application

Email: pustelny@uj.edu.pl (1st round)

Selected candidates will be invited to the interview (2nd round).

The selected candidates will be informed immediately after the interview.

Additional information

For more information please contact **Szymon Pustelny** (pustelny@uj.edu.pl)


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